

## **IN THE CLAIMS:**

1. (Currently amended) A poured molten metal quantity control device ~~for used in~~ a rotary pouring apparatus, the device comprising ~~the following items (1)-(5):~~

(1) a fixed plate brick mounted on the bottom of a molten metal vessel through a base plate and having at least one pouring port;

(2) a collector nozzle brick disposed in confrontation with the fixed plate brick with its pouring port located concentrically;

(3) a slide plate brick sandwiched between the collector nozzle brick and the fixed plate brick and being in contact therewith so as to slidingly turn on the sliding surfaces of the collector nozzle brick and the fixed plate brick and having at least one pouring port;

(4) a ~~frame~~ flame on which the slide plate brick is mounted;

(5) an outer race mounted ~~so as to be turned~~ on the outer peripheral side of the fixed plate brick so as to be turned by an extendable unit; ~~and~~

~~further, the device is characterized in that:~~

wherein the device controls the pouring amount of the molten metal by adjusting a ~~the~~ relatively open position of the pouring port of the slide plate brick and the pouring port of the fixed plate brick by turning the outer race with the extendable unit;

wherein the frame ~~the flame~~ is attached to the outer race through a pivotal hinge so as to be capable of opening and closing movements through ~~open and close operation on~~ the pivotal hinge independently irrespectively of the turning of the outer race with ~~means of the outer race comprising~~ the extendable unit, ~~and~~

wherein the outer race is turned by a crank mechanism using triangle points consisting of a support pivot [[P1]] for supporting the extendable unit, the center of turn [[P3]] of the outer race, and a pivot [[P2]] engaged with an end of an extendable rod of the extendable unit and disposed on [[to]] the outer peripheral portion of the outer race, and the stroke of the

extendable unit and the position of the support pivot [[P1]] of the extendable unit are selected to ~~provide~~ ~~cause~~ a completely open position, ~~[[at]]~~ in which the pouring port of the slide plate brick is aligned ~~matched~~ with the pouring port of the fixed plate brick, to form ~~act~~ as an end position, and a completely closed stop position, which is angularly offset from the end position by a predetermined angle, to form a start position, so that a turn stop position corresponds to a rotation angle between the completely open position and the completely closed position to an entire stroke of the extendable unit;

and wherein the position of the support pivot, the distance between the support pivot and the center of rotation, the radius of the turn of the outer race, and the entire stroke of the extendable unit are selected so that a turn angle is set at the start position to generate at least 90% of a maximum value of the ratio of a component force effective for the turn torque to an axial output of the extendable unit. ~~turned from the end position by a predetermined angle to act a start position.~~

2. (Currently amended) A poured molten metal quantity control device for ~~used in~~ a rotary pouring apparatus, the device comprising ~~the following items (1) - (5):~~

(1) a fixed plate brick mounted on the bottom of a molten metal vessel through a base plate and having at least one pouring port;

(2) a collector nozzle brick disposed in confrontation with the fixed plate brick with its pouring port located concentrically;

(3) a slide plate brick sandwiched between the collector nozzle brick and the fixed plate brick, and being in contact therewith so as to slidably turn on the sliding surfaces of the collector nozzle brick and the fixed plate brick and having at least one pouring port;

(4) a frame ~~flame~~ on which the slide plate brick, into which the slide plate brick is internally fitted, is mounted,

(5) an outer race into which a fixed plate having the fixed plate brick is internally fitted and which is mounted ~~so as to be turned~~ on an outer peripheral side so as to be turned by an extendable unit; ~~and~~

~~—further, the device is characterized in that:~~

wherein the device controls the pouring amount of the molten metal by adjusting ~~a~~ the relatively open position of the pouring port of the slide plate brick and the pouring port of the fixed plate brick by turning the outer race with the extendable unit;

wherein the frame ~~the frame~~, the slide plate, and the fixed plate are attached to the outer race through pivotal hinges on coaxial hinge shafts, respectively so as to be capable of opening and closing movements ~~open and close operation~~ on the pivotal hinges independently ~~irrespectively~~ of the turning ~~means~~ of the outer race with comprising the extendable unit; ~~and~~

wherein the outer race is turned by a crank mechanism using triangle points consisting of a support pivot for supporting the extendable unit, the center of turn  $[[P3]]$  of the outer race, and a pivot  $[[P2]]$  engaged with an end of an extendable rod of the extendable unit and disposed on  $[[to]]$  the outer peripheral portion of the outer race, and the stroke of the extendable unit and the position of the support pivot  $[[P1]]$  of the extendable unit are selected to provide ~~cause~~ a completely open position in  $[[, at]]$  which the pouring port of the slide plate brick is aligned ~~matched~~ with the pouring port of the fixed plate brick, to form ~~act as~~ an end position, and a completely closed stop position, which is angularly offset from the end position by a predetermined angle to form a start position, so that a turn stop position corresponds to a rotation angle between the completely open position and the completely closed position to an entire stroke of the extendable unit;

and wherein the position of the support pivot, the distance between the support pivot and the center of rotation, the radius of the turn of the outer race, and the entire stroke of the extendable unit are selected so that a turn angle is set at the start position to generate at least

90% of a maximum value of the ratio of a component force effective for the turn torque to an axial output of the extendable unit turned from the end position by a predetermined angle to act a start position.

3. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the extendable unit is a hydraulic or air cylinder unit.

4. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the extendable unit is a screw type unit.

5. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the extendable unit is a rack/pinion type unit.

6. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the end position and the start position respectively correspond to the stroke  $[[0]]$  and entire length positions of the extendable rod of the extendable unit.

7. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein a  $[[the]]$  turn angle  $[[q]]$  between the radius of turn of the start position and the center line connecting between the support pivot  $[[P1]]$  and the pivot  $[[P2]]$  engaged with the end of the extendable rod is  $90^{\circ} \pm 30^{\circ}$ .

8. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the pouring port of the fixed plate brick and the pouring

port of the slide plate brick are two or three pouring ports disposed in symmetry with respect to a turn direction.

9. (Currently amended) A poured molten metal quantity control device according to claim 1, ~~characterized in that~~ wherein the slide plate brick is internally mounted in a sliding plate case reversibly attached to the frame.

10. (Currently amended) A poured molten metal quantity control device according to claim 9, ~~characterized in that~~ wherein the fixed brick is further reversibly attached to a bottom plate case engaged with the base plate through a pivotal hinge.